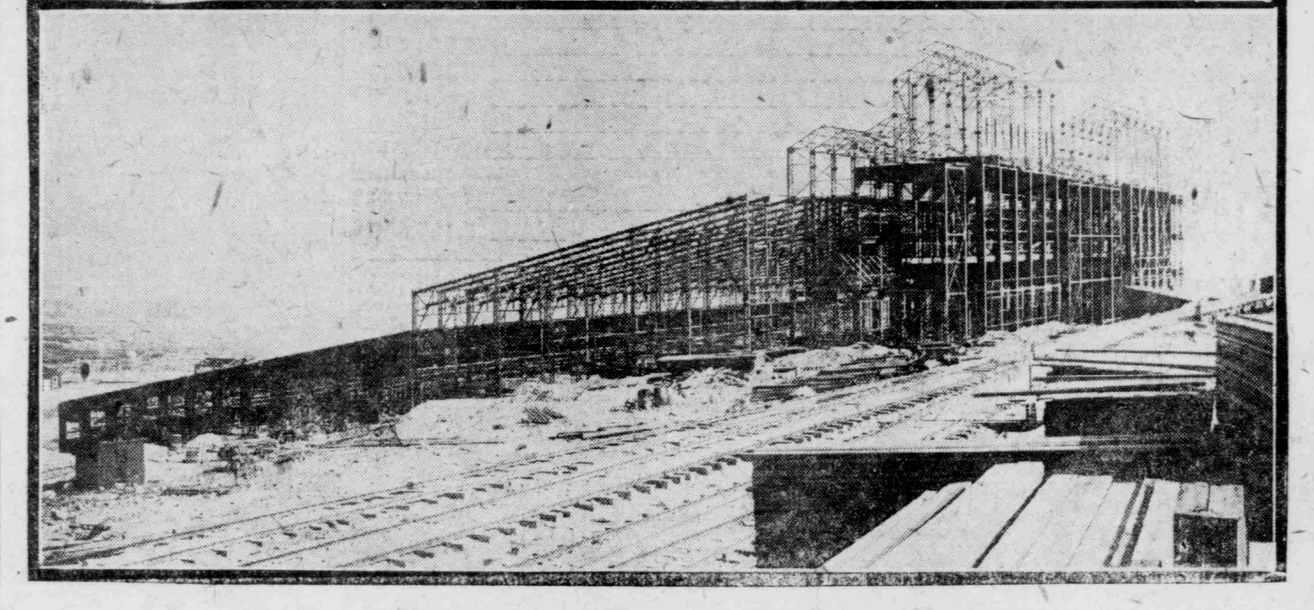
BINGHAM—BIGGEST COPPER CAMP IN WEST

Steam Shovels at Work, Digging Out the Porphyry Ores in Utah Copper Co. Ground.

Ohio Copper Co.'s Mill at Lark. It Will Have an Initial Capacity of 2,000 Tons Daily.



Mighty is Bingham. It takes a big camp and big men with big backing and a world of experience and ability to accomplish what has been gained in the Bingham district. It is no child's play to tear mountains to pieces and so handle the rock that is blasted down that millions can be returned from material holding but $2 or $3 a ton in metallic values. But that is just what is happening at Bingham, the camp which has the mines, the men and money, and everything is being done on a scale of such magnificence that to see it is to feel that the work is not being performed for today or tomorrow, but to endure and continue for all time.

This is the camp in which the world's record for cheap production cost of copper has been made; this is the camp for which one mine has paid its shareholders over $22 per share during the past five years, and which still boasts a treasury containing something like $4,000,000. This is the camp in which still greater mines will begin paying dividends before the next twelve months are over; and this is the camp which, according to present outlook, will boast a half-dozen great mines, both copper and lead, within another two or three years, in addition to those already made and recognized.

Bingham is bigger than Butte, it is bigger than Ely, it is bigger than any copper camp in this western country, and the assertion is made with all due respect to the greatness and prospective greatness of such camps as Ely and Yerington, in Nevada, and with profound acknowledgment of the past performances of that wonderful camp on the north, called Butte. Butte has taken less than thirty years to go over the divide and hit the down-grade. At the end of thirty years Bingham is just beginning to assert its importance, and that, after first paying fortunes in gold, and then more than doubling the performance by making a record as a lead producer.

Position of Utah Consolidated.

It is the Utah Consolidated company to which reference is made above, and it is fitting that, in mentioning some of the mines of the district and what they are doing that first place should be given to this remarkable bonanza. Within the past year Manager J. B. Risque has completely revised the entire system of mining and, in addition to making the property a much safer one in which to operate, he has succeeded in opening some mammoth new ore bodies and laying the foundations for the campaign of the years to come. Where, a year ago, there was talk that the property had seen its best days, it is now acknowledged that its life is just begun. In fifteen months from now the company will be operating a new 1,500 or 2,000-ton smelter just over the mountain from the mine in the Tooele valley, a point that is not half as far from the mine as are the present works of the company in this valley, and where there will never be any such thing as trouble from the smoke and fumes that will issue from furnace and stack. To begin with, ore will likely be transported to the new plant by aerial tramway; later it will be sent right through the mountain in a deep tunnel connecting the mine and smelter and over tracks that will be kept well polished by the whirr and buzz of the wheels of electrically-operated ore trains.

Utah Copper History.

Now comes the enterprises that rank in classes all by themselves in the copper mining world. First of these the Utah Copper company and then the Boston Consolidated. It was on the properties of the Utah Copper company, the control of which was then under option to Captain Joseph R. DeLamar, that it was completely demonstrated that the copper-bearing porphyry deposit of the camp, with its 1 to 2 per cent of the red metal, could be operated at a handsome profit. DeLamar, through the maneuvering of a bright lieutenant, was made to believe that he could allow his option to expire and get the ground on better terms; but the nature of the play being shown to Colonel E. A. Wall, the owner of the ground, he refused absolutely to listen to any new proposition, notwithstanding that one-fourth of the ground had already been purchased by the captain.

D. C. Jackling, the present general manager of the Utah Copper company, had been on the metallurgical staff of Captain DeLamar, and knew what could be accomplished with the ore, so he finally went to work and interested Charles M. MacNeill, Spencer Penrose and others in the proposition, with the result that DeLamar's interest was bought outright and a deal was closed with Colonel Wall that gave the syndicate a heavy control of the mines. Then followed the organization of the company which is this minute tearing down ore with six steam shovels at a rate which supplies about two-thirds of the tonnage that is going to the 1,000-ton mill of the company at Bingham and the 6,000-ton plant at Garfield.

A section of the mine is depicted in a half-tone accompanying this story, where are located the steam shovel pits. Here the ore is loaded direct into fifty-ton cars of the Rio Grande railroad and hauled to their destination at one or the other of the company's mills. In this mine there is more ore blocked out than can be utilized in the next twenty years at 10,000 tons a day and the ground has been prospected to sufficient depth by drilling rigs to make it certain that, if copper is still being used, the mines can be operated steadily for another 100 years. Where Butte is compelled today to mine at great depth through deep and hot shafts, the Utah Copper company will be still quarrying out its ore fifty years from now. That is one of the reasons why Bingham is a greater camp than Butte; that is why Utah Copper is a bigger mine than any mine in Butte; that is the reason it is now operating full-handed, when all of the deeper and older mines of Butte are closed down. It don't cost anything, hardly, to mine at the Utah Copper company's mines.

The Boston Consolidated.

While the Utah Copper company was the first to detect the earning capacity of the copper-bearing porphyries of the camp, it is due to the management of the Boston Consolidated to say that it was the first to begin operating steam shovels in stripping the deposits for mining. And, if you want to see a busy place, go out to Bingham some day and see the half dozen mammoth steam shovels at work on the mountain of porphyry in Boston Consolidated ground, and then glance down the hill and note the half dozen ploughing up the ore in the pits of the Utah Copper company's property. When you have done that you will be better able to appreciate what a hive of industry Bingham is, and you will also be better able to comprehend what a small amount of material 10,000 tons of ore really is when compared with the size of the mountains from which it is being mined and which only show the small end of the deposit sticking out of the ground.

The Boston Consolidated is just now preparing to place its 3,000-ton milling plant in commission. It will need a mill twice that size next year. The mines of this company carry two classes of ore, the porphyry and sulphide deposits in the limestone which flanks the porphyry. Louis S. Cates, mines manager at the property, has made a remarkable record for telling work during the year, and while it is intended to place the new milling plant in commission section by section, and it will therefore be two or three months, possibly, before it is going at capacity, the mines are in shape to supply any tonnage desired right from the ringing of the bells New Year's morning. Figuring on an average of twenty-one pounds of copper to the ton of porphyry ore and an average extraction of 66 per cent, and both are considered low estimates, the company, through the treatment of 3,000 tons of ore per day will turn out 22,000,000 pounds of marketable copper per annum. This, it is figured, will be done at a total cost per ton of ore treated of $1.89½, divided as follows: Mining, 25c; transportation, 27½c; stripping, 12½c; milling at the Garfield plant, 35c; smelting, refining, freights, etc., 89½c. This means a cost of approximately 9c a pound for the refined copper.

Bingham Con. and United States.

There is not a great deal to say for the operations of the Bingham Consolidated and United States companies in the camp for the past year. As everybody now knows, the Bingham Consolidated company is quitting the smelting business and there will be little doing at its mines pending the construction of the new Heinze smelting works in the Tooele valley, a few miles south of the American company's Garfield smelter.

The Bingham mines of the United States company have been considered of value chiefly for the fluxing qualities of the rock, which carries excess of iron and a little copper. If the company ceases copper smelting in this valley, as now seems a foregone conclusion, it will have little use for its Bingham mines until a smelter is built at some other point or arrangements are made to send the rock to some other plant. It has the Kempton lead mines, but no attempt is to be made to handle the ore from them until the price of the metals look better and until the question of whether the company's lead smelter at Bingham Junction will be allowed to continue in operation or not.

The Yampa Bonanza.

The mines and smelter of the Yampa company are now in shape to make a record run during the year just opening. During the past fall and early winter months the smelter has been thoroughly overhauled and enlarged and the mine has been placed in the pink of condition and will outshine all achievements of the past in the matter of supplying tonnage at a minimum cost. With the completion of the company's aerial tramway the best of transportation service between mine and smelter is secured, and with a half decent price for copper and a market with a little ginger in it, the company will make a record that will compare with the best of them. There are years of ore blocked out in the mines, and no property in the camp, that mines in the usual way, has any license to produce ore cheaper than the Yampa.

Ohio Copper's Greatness.

The Ohio Copper company, the proposition that the enemies of F. A. Heinze have tried their level best to wreck during the past three months, is one of the biggest propositions in the Bingham camp. Since the property was purchased a few years ago by the Catrows the mines have been made to pay their way and at the same time pay back the money that they cost—this from the mining of high-grade ore and milling of second-class in a restricted fashion. When the original option on a control of the stock was given to Heinze it was decided to prospect the big belt of lime that separated to the two big mineral-bearing parallel fissures in the property. This work quickly demonstrated that the entire mass was ore, ore just as high in grade as the porphyries of the Utah Copper or Boston Consolidated, if not higher, and that a remarkably close extraction was possible by ordinary milling methods. Later, when a deal was finally made for the property, it was decided to send down a big operating shaft, extend the Mascottee tunnel to get under it, build a great mill at the mouth of the tunnel and arrange for the making of copper on an extensive scale and at a cost that the management has from the start felt certain would be as low as that of any other company in the camp. All of this work has been going on for months, and when the magnificent milling plant is completed, sixty or ninety days hence, all connections will have been made and everything will be ready for big doings.

While it was impossible to get a picture of the 2,000-ton milling plant that was right up to the minute, the splendid half-tone shown in connection with this review article gives a fine idea of the manner in which Constructing Engineer Colin McIntosh is pushing the work along. It is claimed that no mill in the country has been constructed with more attention to detail and stability, and one placed in commission, it will be there to run forever, and it will need to go that long if the mine is worked out. The mill is being constructed on the unit principle, and its enlargement can be accomplished at any time without closing down for a minute.

The little embarrassments that have overtaken this splendid enterprise during the past few months have not even delayed the plan of campaign, and there is no question but what, when fully rounded into form, as it will be during the next twelve months, it will rank with the top-notchers in the western world of copper mining.

Other Mines of the Camp.

While the properties enumerated above are the ones that have brought the camp of Bingham to such a splendid position in the copper-producing world through past achievements and wonderful preparations for action in the future, and while the finest talent that money could buy has been enlisted in the enterprises, the accomplishments of these great companies have not stopped at the making of their individual properties. What they have done and what they have shown could be done has stimulated others to action. By and by this fact will be appreciated in the rounding out of other undertakings that will step into the limelight of success on lines, possibly, just as broad as those now drawn by the mammoth concerns of the camp.

As a matter of fact, most of the big men in the big companies have been able to see other possibilities in the camp themselves, and they are now quietly at work whipping other propositions into form. News of these undertakings will be coming out from time to time, but for the present it is not deemed right to take them up in detail.

Among the propositions that are in full swing and which are making good can be mentioned the properties of the Bingham-New Haven company, a corporation that is classed as "close" because its shares are in the hands of a few people. The company is a dividend-payer now, and being excellently handled, there is no question but what it will continue for a long time to come as one of the really big mines of the camp.

The Bingham Central-Standard is another proposition that is rapidly coming to the front. The Phoenix is another. Colonel E. A. Wall's Starless is another, and the properties of the Bingham Copper company are slated to make a record in the district when present plans are carried out that experts, the best in the country, are predicting will equal the best of them. Thomas Weir is making a big mine of the Ute Copper company's holdings; the Utah-Apex company has made long strides in the direction of working out its destiny, while Bingham Amalgamated Copper, the Fortuna, the Last Chance of the Nevada-Utah company, the New England and a dozen more, at least are all entitled to consideration as having a future that must make a noise in the camp during the years to come.

Practically all of the mines and mills of the camp and the prospects, as well, are operated by electric power. All of the principal mines are either reached by the railroad, or aerial tramways give them direct transportation connections with the lower terminals of the railroad, so it is a camp in which operations can be economically conducted. It is only twenty miles to the mines of the district from Salt Lake; it is less than that to the smelters and other reduction works. In fact, every condition is right for the building up of the district and the carrying on of mining on a scale such as few camps in the country can boast of.

UTAH COPPER CO.

The largest copper producing property in Utah today is unquestionably the property of the Utah Copper company. D. C. Jackling, the general manager of the company, and one of the big men in the western mining country, controls a proposition in the mine and mill belonging to the company that is probably unequaled in this part of the west. Mr. Jackling has stated recently that the output of the mine for the current year will amount to about 15,000,000 pounds of copper. This, however, is but the average for the year that is closing, and for the past few months the production has been on an average about 3,000,000 pounds a month, or 36,000,000 pounds annually.

The new Garfield mill was placed in commission last August, and at present seven sections of the mammoth plant are in operation and treating about 3,000 tons of ore a day. Plans have been made so that the capacity of the plant can be readily increased as the demand of the mine requires it. The capacity can be run to 6,000 or 10,000 tons a day. The Copperton mill, operated by the Utah Copper company further down in Bingham canyon, handles about 1,000 tons of ore daily, and the ores from both mills are treated by the smelter at Garfield, where the metals are reduced to bullion form. The concentrate product carries copper values of about 30 per cent, with associated values in gold and silver.

The Big Mill.

There are few finer or larger mills in the entire west than that of the Utah Copper company. The mammoth building is 600x600 feet in size, with its superstructure of structural steel. The sides are of corrugated iron, and the floors of concrete surfaced with cement. The floors are arranged in steps sloping downward to give the drainage required. Excellent lighting arrangement has been provided by big light wells in the roof of the main building.

The crushing department consists of rolls, screens and Chilean mills set in a broad alley running the length of the building. This alley is cleared for the traveling of a powerful overhead crane. The function of this latter device is interesting. It has no other purpose than to be ready to lift from its place any one of the machines or any part of the machines on either side of this alley that may get out of order, and substitute a new one in its place. The ore, on being brought in from the mine at Bingham, comes in at the back of the mill, passes over a scale and is dumped into a bin of immense size. On top of this bin are three railway tracks. The bin is of wood with its sides built up with plank laid twelve inches wide at the bottom and tapering off to a narrower width at the top. The coarse crushing departments are in front of the bin, two in number, each having 3,000 tons daily capacity. The ore received from the mine is dumped into hoppers connected with the two crushers, that is, as long as the railroad delivers 6,000 tons of ore a day the crushers handle it with the regularity of clockwork. In two passageways under the bin large electric larries are operated. When it is necessary to take ore from the reserve portions of the bin, it is drawn off through gates, operated by compressed air, into the larries which tram it into the hoppers, from which the breakers are fed by gravity. Each coarse crushing division has two No. 7½ Gates breakers, reducing the ore to 1.5 inch size. The breakers deliver the ore to two 22-inch belt elevators, which in turn deliver to trommels with 0.5-inch perforations, the over size going to two sets of 20x84-inch rolls, provided with rolled steel tires, as are all the rolls in the mill. These rolls revolve at the rate of sixty revolutions per minute. Their product is lifted by a 20-inch belt elevator, which in turn delivers it to a series of belt conveyors for distribution into a storage bin of 15,000 tons capacity in the back of the mill extending the full width of the latter. Between the elevator and the conveyor there is a modified Vezin zampler designed to cut out one per cent of the ore as a sample. This, however, will not be done in the big mill, for the uniformity of the ore makes it practically unnecessary. The distributing conveyors are twenty inch belts 250 feet long contained in a traveling frame, which is movable in any direction. The belt can also be run either way. The ore is discharged over the end of the conveyor, the action of the whole apparatus lengthwise effecting the distribution. The use of trippers is avoided in this way, and the arrangement is found to be the most economical that can be used under the circumstances.

The ore is taken from the bin described last above and drawn to the twelve sections of the mill, each one of which is a precise duplicate of the other. The ore passes first through two sets of rolls in each section. The rolls are 18x36 inches, running parallel, and to eighty revolutions per minute. These rolls deliver the ore to two 22-inch belt elevators, which in turn deliver to four cylindrical trommels covered with steel plate containing one-eighth-inch perforations. The oversize from the trommels goes back to the rolls, while the undersize goes to the hydraulic classifiers. The fine products of the classifiers goes to the tables and the coarse and heavy product goes to the six jibs. The hutch work on the jibs goes to four Wilfley tables, which make a finishing concentrate. The tailings from the jigs and Wilfley tables are received by a 20-inch belt elevator, which delivers to three Chile mills. The latter are supposed to crush to approximately 40-mesh size. This product passes to the hydraulic classifiers and thence to the slime tables, which are modified Johnson vanners. These have corrugated belts for the treatment of the coarser material and smooth belts for the finer. There are ninety-two vanners per section, or a total of 1,104, in the mills.

The concentrates and tailings throughout the mill are disposed of by gravity. The former flow to a series of rectangular masonry bins below the mill, with suitable overflows for the water. From these bins the mineral is moved by crane and a clam shell bucket directly into the railway cars.

From this description of the mill it may be seen that the property is one of the most modern and complete ever installed in this state. The power plant operated by the company is one of the finest in the country. The company has a payroll amounting to about $125,000 monthly. The credit for the development of the property and the installation of the property is due largely to the management of Mr. Jackling.

L'ENVOI.

(Chicago Record-Herald.)

When Wall street's last gambler is busted and the credit he asks is denied,
When the fleeces of lambs are no longer hung on his back fence to be dried,
We shall rest, and, faith, we shall need it—our ways we will calmly pursue,
Without being troubled by panics brought on by a money-mad few.

And those who have worked for their savings perhaps shall have nothing to fear,
And the doors of the banks will be open when the crowds with their pass books appear;
The flurries shall cease to alarm us, and bravely we'll weather each squall,
And they that sit down by the tickers shall never be worried at all.

And only the honest shall lead us and only the honest shall claim
The profits they keep within reason, and none shall begrudge them the same.
But each shall invest and be certain, in case he has purchased at par,
That the bottom will still be tomorrow, where all bottoms properly are.